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ABSTRACT

Change may result from product advocacy, laissez-faire competition, or change-process advocacy. The National Institute of Education (NIE) has adopted the last posture, whereby the agency advocates a strategy of implementing change by sponsoring a sequence of activities including need and capability assessments, trial of alternatives, evaluation and implementation. Within this context, NIE's dissemination and utilization efforts involve a knowledge production sector, multiple communication channels and a knowledge using system. Trends influencing dissemination include the growth of education as a community-wide lifelong concern, decentralization, and the increase of educational conflicts. If educators are to be free to choose among alternatives, NIE's dissemination efforts must recognize that dissemination dynamics are generalizable across settings, that the lasting effect of change is upon people, not things, and that adaptive behavior is more common than adoptive behavior. It is recommended that NIE: 1) support change processes, not products; 2) stress need and capability assessments and long-range planning; 3) attend to the implementation procedures which intervene between dissemination and utilization; 4) promote cooperation among agencies; 5) adopt new communication technologies; and 6) conduct research on the dissemination and utilization of innovations. (PB)

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Recommendations for the Dissemination & Utilization Program of the National Institute of Education. (Draft Prepared by William J. Paisley for the USOE - NCEC Research Advisory Comm. on Change Processes in Education. April 3, 1972

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# MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION

TO : Professional Staff

DATE: April 24, 1972

FROM : Ben Sprunger

SUBJECT: Paper prepared by the dissemination scholars.

Attached is a draft copy of the paper prepared by the dissemination scholars. They were convened by NCEC; however they agreed to discuss NIE and prepare a discipline paper.

Those involved were:

Neal Gross, University of Pennsylvania
Dirk Carlson, University of Oregon
Ron Havelock, University of Michigan
Ron Lippitt, University of Michigan
Ev Rogers, Michigan State
Matt Miles, Suny (Albany)

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DRAFT

# RECOMMENDATIONS FOR THE DISSEMINATION AND UTILIZATION PROGRAM OF THE NATIONAL INSTITUTE OF EDUCATION

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Prepared by William J. Paisley, for the USOE-NCEC Research Advisory Committee on Change Processes in Education, April 3, 1972*

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At the request of Ben Sprunger of the NIE Planning Unit, the Research Advisory Committee on Change Process in Education (RACIPE) met at the end of February 1972 to discuss:

1. NIE's support of research on the dissemination and utilization (D&U) phases of educational change.

2. NIE's own, operational D&U program.

NIE's program of research on D&U has been discussed in a paper by Ronald Havelock, chairman of RACIPE. NIE's own, operational D&U program is the topic of the present paper.

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*Sections 3 and 4 of this paper derive from RACIPE's discussion on February 22. Sections 1 and 2 have been prepared by the author as context for the later discussion.

## 1. Background

Change occurs naturally throughout society, but at a pace that cannot keep up with technology, growth of knowledge, etc. Accordingly, agencies are created in many sectors of the society to systematize and foster change. In the federal government, the new National Institute of Education has been given a broad mandate for educational change and renewal.

NIE is founded on the belief that educational practice can be improved through large-scale research and development (R&D) efforts. If this belief is to be borne out, in spite of R&D's minor impact on educational practice now, then effective mechanisms must be created to bring R&D products to the attention of educators and to ensure that products receive an adequate field trial.

Around the world, change-oriented agencies have adopted three distinguishable "postures" with regard to the products or reforms they support. Oldest among these is the product-advocacy posture, borrowed from religious and political evangelism. For example, turn-of-the-century populist reformers advocated simple solutions to complicated social problems. Their counterparts in government, in such agencies as the Department of Agriculture and the Public Health Service, were sanguine about hybrid seed and immunization.

When evangelism wears thin, the reaction is a laissez-faire posture. An agency leaves the fate of its product to the market-

place and the astuteness of potential adopters. Since the marketplace is crowded, the product rarely comes to the attention of potential adopters and their astuteness is not tested.

The newest posture that can be seen in change-oriented agencies is that of change-process advocacy. Instead of advocating particular products, which are certain to disappoint some adopters, the agency advocates a strategy of planning and implementing change. Although the agency favors some alternatives because it has invested in them and tested them, it does not risk its credibility in promoting those alternatives. Rather, by guiding potential adopters through a sequence of activities that include need assessment, capability assessment, exploration of alternatives, trial of selected alternatives, evaluation of the trial, implementation of the chosen alternative (etc.), the agency secures a fair trial for the alternatives it supports. It brings about change while preserving the voluntaristic character of the choice among alternatives.

The product-advocacy and laissez-faire postures have simple rationales. They are the "try it -- you'll like it" and "take it or leave it" extremes. Change-process advocacy has a more involuted rationale. Skepticism in the merit of particular alternatives is balanced by belief in flexibility and readiness to change. The improvability of people and situations is a root ethic, but it is not accompanied by any strong conviction that the improvement will occur in the short term.

The evolution of federal D&U for the field of education. In the 15 years since NDEA brought the first large-scale support to educational R&D, we have seen a healthy evolution of D&U strategies focusing on R&D outcomes. While much of USOE adopted the NIH or NSF laissez-faire posture ("We support basic research, not yet applicable to field problems"), various bureaus and divisions engaged in product advocacy. Programmed instruction, educational media, individualized instruction, the resource center concept, reading instruction techniques, drop-out prevention (etc.) exemplify the range of products advocated at one time or another.

The laissez-faire posture preserved USOE's overall credibility, but all the world loves an advocate. For 15 years, educational conventions and educational journals have been spiced by a variety of products bearing something like the USOE stamp of approval. Despite the rapid turnover of products (and advocates), USOE's episodic product-advocacy can be credited with more "good" than its fundamental laissez-faire posture.

The evolution of ERIC encapsulates the larger USOE trend. ERIC was conceived as a knowledge codification-preservation system. Its models were the scientific information systems of physics, chemistry, medical research, etc. To the extent that early ERIC had any change orientation, its files were viewed as the marketplace in which educators shopped for solutions to their problems. Few shopped, and fewer bought.

ERIC was wisely guided out of that early mold by its directors. Leaving ERIC as a knowledge base but reducing its share of USOE's D&U budget, they began to experiment with "active dissemination" programs. Initial effort involved information synthesis and "targeted communication" of the syntheses to selected audiences. There has been a fair amount of product-advocacy in the targeted communication program, but only because each TC report is like a page ripped out of Consumer Reports. If there were enough money to support the other pages, a single page would seem objective in context.

The targeted communication effort has evolved, most reasonably, into a search for "validated products" that can be advocated. According to the usual regress, the search for validated products has led to a search for validation procedures of an extrinsic or consensual character. These programs of the National Center for Educational Communication, if and when they work out successfully, will legitimate product-advocacy but also render it unnecessary among the large group of educators who are now watching for comparative data on alternatives they are already aware of.

In other words, ERIC (accually NCEC as a whole) has evolved from a laissez-faire posture, through episodes of product-advocacy, into a present and future commitment to change-process advocacy. Product-validation data will be just one element in an emerging "technology" of information processing, alternative testing, and decision making on the part of educators.

In this view of change-process advocacy (which is different, for example, from Buckminster Fuller's), it is both possible and necessary to teach a repertory of skills bearing upon problem formulation, information search, alternative exploration, alternative testing, alternative selection, implementation, maintenance, decision review, etc. In a series of projects, NCEC advocates and develops these skills in educators.

NCEC's full step forward into change-process advocacy comes with the educational extension program, now getting underway. Extension agents, supported with some federal funds but attached to SEA's and LEA's, assist educators in formulating problems, see to it that necessary information is retrieved from ERIC and elsewhere, and in general perform many of the functions of the expert consultant who is unavailable to the average educator.

The combination of extension agents, targeted communication, and the ERIC knowledge base may prove to be one of the most effective D&U strategies of any federal agency. The conception may also have defects and gaps that only time will reveal. Either way, further changes are to be expected in the program, by its very nature.

## 2. Knowledge production, dissemination, and utilization systems

A characteristic of modern society is multiplicity in knowledge production, dissemination, and utilization systems. Throughout most of modern society there is no shaman, no tribal council, no "only way" of performing personal or social functions. Knowledge production, dissemination, and utilization are all pluralistic, often to the point of "information overload" and "future shock."

Figure 1 illustrates the three interdependent knowledge systems. None is a closed system. All have permeable boundaries and each reacts continuously to developments in the other two systems. Yet each is internally controlled and each responds to different norms and rewards. Even the dissemination system, which seems to exist for the purpose of coupling the production and utilization systems, has norms and rewards that are unrelated to coupling or "throughput," as traditional libraries make us all too aware.

Figure 2 expands the knowledge production system to show some of its internal processes. The list of processes is illustrative. The scope of activity in this system would only be suggested if we listed every internal process of a large university, a research corporation, and a "think tank."

FIGURE 1. The flow of knowledge in [illegible]cation (or any other field of activity).

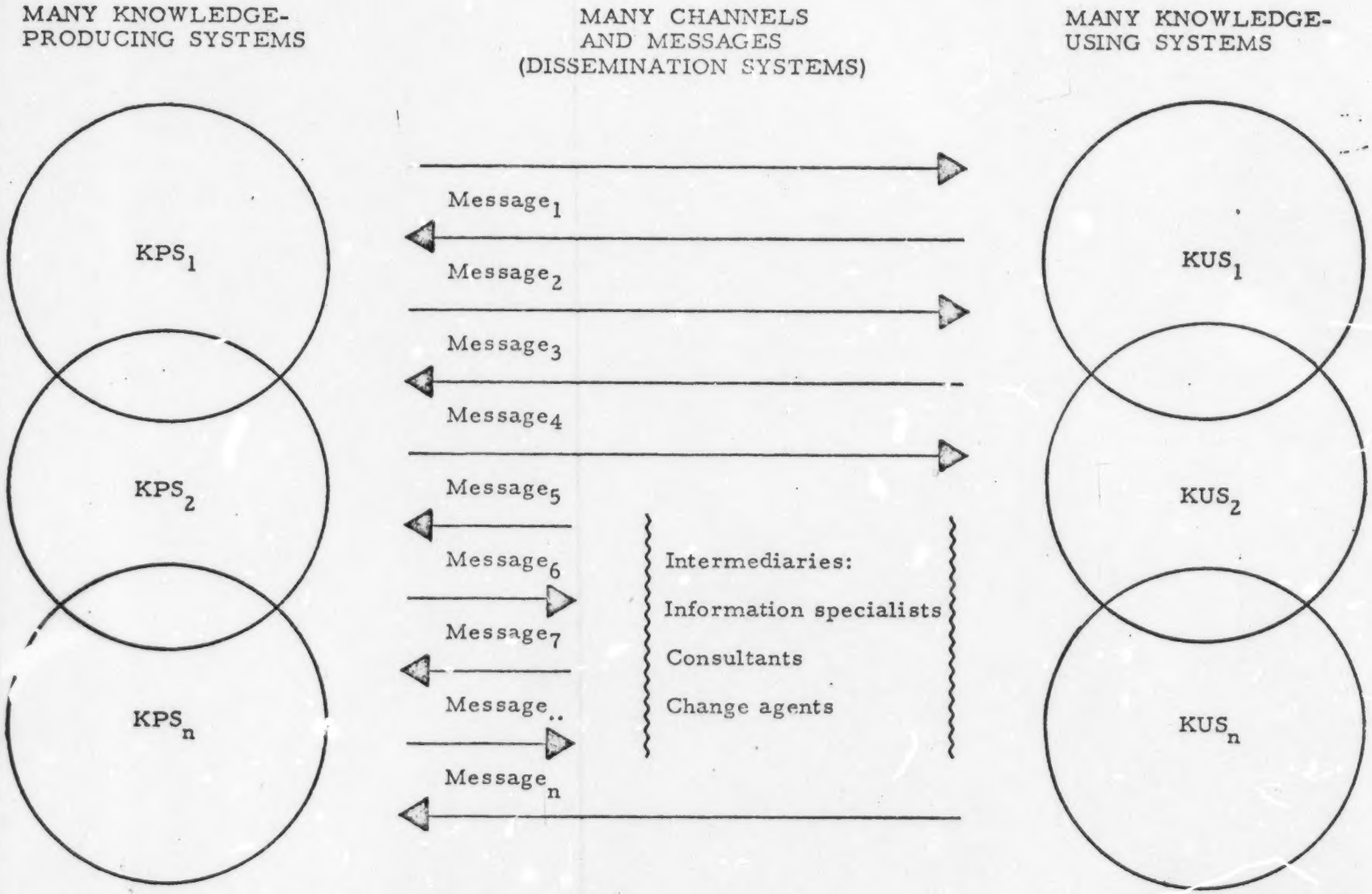

FIGURE 2. Processes within the knowledge-producing system.

Basic (conceptual) research

Applied (conceptual) research

Field needs assessment

Product development

Product testing

Product modification

Product packaging

Knowledge review, synthesis, and codification

Feed-forward to dissemination system

System maintenance:

- Self-criticism
- Training of future knowledge producers
- Arrangements for support

(Etc.)

Figure 3 expands the dissemination system to show its internal processes. Again the list is illustrative. A complete list would include the activities of book publishers, journal publishers, libraries and information centers, preprint and manuscript exchange arrangements, bibliographic services, conventions and symposia, continuing professional education programs, mass media, and innumerable personal encounters -- some of which are formalized in extension programs like USOE's.

According to prevailing expert opinion (for example, Ronald Havelock or Charles Jung), the dissemination system must attempt to remedy deficiencies in both of the other systems. If the knowledge-producer is perfunctory in making his work available or comprehensible, the dissemination specialist ferrets it out and transforms it according to the needs of particular users. If the knowledge-user is inept in analyzing his needs, the dissemination specialist assists him and then searches the knowledge base on his behalf. The role of the "knowledge linker" (Havelock) or "consultant" (Jung) is a very demanding one. USOE-NCEC is currently wrestling with the problem of specifying a manageable set of functions for extension agents.

Figure 4 expands the internal processes of the knowledge utilization system. Some of these have been stated elsewhere (for example, by Everett Rogers) as phases in the adoption of innovations, and of course they are. However, "innovation"

FIGURE 3. Processes within the dissemination system.

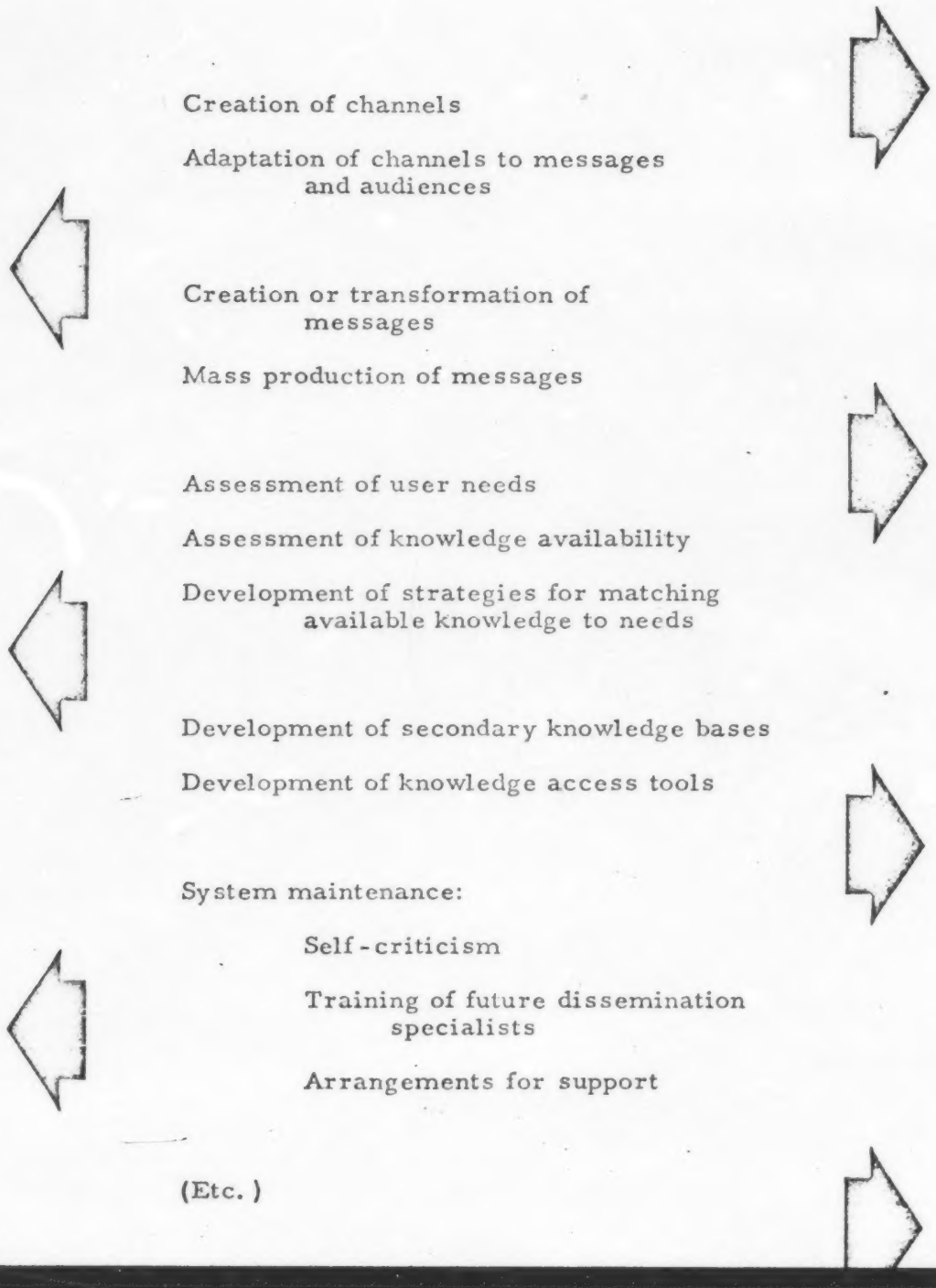
Creation of channels
Adaptation of channels to messages and audiences
Creation or transformation of messages
Mass production of messages
Assessment of user needs
Assessment of knowledge availability
Development of strategies for matching available knowledge to needs
Development of secondary knowledge bases
Development of knowledge access tools
System maintenance:
Self-criticism
Training of future dissemination specialists
Arrangements for support
(Etc.)

FIGURE 4. Processes within the knowledge-using system.

Need assessment

Capability assessment

Knowledge searching

Exploration of alternative solutions to identified problems

Trial implementation of one or more alternative solutions

Evaluation of trial implementation

Full-scale implementation

Systemic restructuring, as necessary, to accommodate change

Maintenance of change

System maintenance:

- Self-criticism
- Training of future professionals
- Arrangements for support

(Etc.)

connotes products and procedures, not new concepts per se. Knowledge utilization is the more generic term for this system; it encompasses new ways of thinking as well as new products and procedures.

The nature of these vital, ever-changing systems cannot be captured in circles or lists. The knowledge production system is also a major knowledge utilization system. Scientific information systems exist to close this loop (from researcher to researcher). The knowledge utilization system produces vast amounts of knowledge itself, of an experiential or field-trial character. Such knowledge is often lost from the system, because practitioners are not encouraged or assisted in sharing their insights or "better mousetraps." To the extent that all of us are "dissemination specialists" on occasion, that system is also ambiguous.

However, the terminology that describes these knowledge systems and the relationships depicted in Figure 1 will be convenient points of reference in later sections of this paper.

3. The larger context of trends and values

Certain trends in American education indicate a different course for the NIE D&U effort than would have been true ten years ago. Some of these trends are:

Education as a community-wide concern. The schoolteacher, physician, lawyer, and preacher are no longer the only educated residents of a community. Even in traditional "book learning," many groups and institutions in the community are fully able to share the school's responsibility. Nontraditional educational activities, ranging from compensatory and enrichment programs to vocational training, have already moved out into the community. Nonschool educational activities will increase, involving more and more community resources, and school itself will become a moveable feast.

NIE D&U effort must take account of education's new sites and its new participants. The latter, which include nonprofessionals and paraprofessionals, have greater need for the dissemination product, yet are harder to reach.

Education as a lifelong concern. The Carnegie Commission report, Less Time, More Options, noted that a trend toward lifelong learning was well underway. As the school and other community facilities become drop-in centers for lifelong learning, dissemination must be relevant to educational activities outside the K-16 sequence.

Decentralized decision making. Dissemination is simplest when decision making authority is centralized. In the future, however, it will not be sufficient to reach only the superintendent or principal. Teachers and students are successfully claiming the right to participate in decisions that affect the collective enterprise. These groups will be especially sensitive to the possibility of exclusion from D&U efforts. The problem -- and the sensitivity -- are compounded when the teachers or students represent an ethnic minority as well.

Finance, governance, and adversary communication. Education has used up its tradition of polite discourse. The divisive topics of finance and governance have moved to center stage. Neutral communication has given way to adversary communication.

The NIE dissemination unit will face many difficult decisions in these topic areas, which can neither be avoided nor treated to everyone's (perhaps anyone's) satisfaction.

Educational "war zones." Some urban areas in this country have become "war zones" in which conventional education is paralyzed and ad hoc alternatives only occasionally succeed. There is a tendency in educational D&U to ignore these "war zones" because the educational problem seems so deeply ramified in noneducational factors. As a consequence, few D&U strategies have been developed to reach educators, students, or parents in these areas.

NIE's commitment to concentrate on these "war zones" will require new solutions to old D&U problems. Even the information processing and decision making behavior of educators in these settings is an unresearched factor in the success of D&U.

The value context. Many currently held values in education impinge on the D&U effort -- for example, individualization of student experiences, curriculum relevance, accountability for funds and labor committed, etc. Three values that bear directly on D&U policy are:

1. The education should have maximum freedom to choose among alternatives according to their cost-effectiveness and other merits as he perceives them. That is, the necessary conditions of choice (prerogative, competence, financial capability, etc.) should not be used by others to abridge the educator's right to practice his profession in ways that seem most effective to him. Some constraints of coordination and large-scale adoption are necessary. Others are unnecessary; they are symbols of authority per se.

As a corollary to #1, the D&U system should never be pre-emptive or coercive. Most persuasion or other choice-forcing strategies are not legitimate in D&U.

2. The educator should have knowledge of the broadest range of alternatives. Choice is not free if the educator only has a few similar alternatives to choose from. The broadest range of alternatives,

from the conservative to the radical, should be brought clearly to his attention. (It can be said to ERIC's credit that anti-establishment and counter-culture documents have been included in the system, although the ERIC acquisition net catches only a small number of them.)

3. The educator should be protected, as far as possible, from making a poor choice. The role of #3 is best illustrated by analogy. We place a high value on our freedom to choose a personal physician (cf. #1). When making the choice, we wish to have a number of physicians to choose from -- not just two or three (cf. #2). We also wish assurance, from the county medical board or otherwise, that physicians on the list are not quacks (cf. #3).

There is not much deliberate fraud in educational product advertising, but there are many overblown promises and specious validation claims. Without abridging his freedom of choice, the educator should be warned of discrepancies between fact and fantasy in the educational marketplace.

The value of freedom, the value of range, and the value of reliability should be acknowledged and enhanced by NIE's D&U system.

4. Recommendations

First, it is recommended that NIE's D&U planning unit take account of the following propositions, all of which have empirical support:

1. Left to itself, education's "natural" D&U network brings about rapid change in advantaged districts, slow change in disadvantaged districts. The "natural" D&U network widens the gap between the haves and have-nots.

2. D&U dynamics -- for example, the adoption of innovations -- are generalizable across settings and innovations. These dynamics need not be rediscovered for NIE's D&U planning purposes.

3. The lasting effect of D&U is "people change," not "thing change." This is the reason why, for example, efforts to introduce educational technology in the schools largely failed during the 1960's.

4. Adapting behavior is more common than adopting behavior. People find it necessary or desirable to modify innovations in the process of adopting them. In some cases this leads to unintended subversion of the goals of the innovation.

5. Effective D&U depends on multi-channel synergy. No single D&U system in a country like the United States commands more than a small fraction of attention in its target audiences. Communication research literature on the "obstinate audience" reveals the intractability of the problem. Only when multiple D&U systems coordinate their efforts is the outcome successful.

Given these propositions, which are of course only a partial list, we recommend:

R1. NIE should advocate processes for solving problems, but usually not advocate particular solutions. In other words, NIE should launch its D&U efforts in the era of change-process advocacy and not recapitulate the product advocacy and laissez-faire eras of other agencies.

R2. Corollary to R1, NIE should provide materials and other assistance in support of rational decision-making among educators. The materials and assistance would be procedural (guidance in problem solving) as well as substantive (alternative solutions).

R3. At the beginning of these processes (R1 & R2), NIE should stress the importance of need assessment and capability assessment. It will be necessary to provide assistance in the conduct of such assessments. NIE may wish to assign D&U manpower to meet this need, since successful D&U and rational decision-making are both founded on knowledge of need and capability.

R4. NIE's D&U program should be directed toward long-term rather than short-term successes. At the end of ten years, more change will have occurred if NIE first builds an atmosphere of trust and confidence within the D&U network and does not try to force-feed innovations in schools where they are not wanted or needed.

R5. NIE should emphasize, in its D&U effort, demonstrably effective alternative solutions to educational problems. The Institute should support development of alternative solutions through the entire

R&D cycle, but it should also seek to validate existing alternatives, as NCEC now seeks to do. Even if only a fraction of the existing alternatives are valid (this seems to be the case, according to NCEC-ETS study of the matter), it will be cheaper and faster to move these out into D&U channels than to base all NIE dissemination on NIE's own, new research.

R6. NIE should recognize the complexity of, and provide for, the implementation phase that comes between D and U. Implementation failures are a common cause of poor outcomes in later evaluations. Many programs are faulted for poor performance when, in fact, they never got off the ground.

R7. Vis-a-vis other agencies, professional associations, publishers, etc., NIE should avail itself of every opportunity to coordinate efforts for the sake of synergy. "Going it alone" is a prescription for failure. The cooperative arrangements that NCEC has developed should be studied with care, in their historical context. However, a new agency should be able to establish a broader network of cooperation.

R8. Natural networks of communication and influence among educators should be used wherever possible. Familiar principles of "gatekeeping" and "opinion leadership" in such networks can guide NIE's strategy of entering the networks.

R9. NIE should facilitate the creation of user coalitions to attack major education problems. D&U then flows within the knowledge utilization system, not just into the knowledge utilization system from the knowledge production system.

R10. New communication technology should be included in the D&U system as soon as it proves itself in particular applications. User-controlled media such as audio and video cassettes are ready for D&U application now, particularly for "current awareness" and inservice training. Cable television is leading to "wired communities" which, by FCC requirement, have extra channel capacity for professional communication. These systems will be useful to educators, physicians, etc. NIE should watch these developments closely and prepare dissemination program material when the time is ripe.

R11. NIE's D&U planning should involve representation from all levels of educational systems, perhaps in the form of an advisory panel. Such input not only "certifies" the D&U effort to various constituencies, but the current field experience of panelists may help to reveal defects or gaps in the plan.

R12. All D&U programs should be introduced as experimental or provisional in nature, subject to modification after evaluation. Alternative strategies should be tested in true field experiments in different regions of the country (randomized block design). Single strategies should not be oversold, because later modification or deletion is then an embarrassment to the agency.

R13. Inasmuch as many factors in successful D&U have yet to be researched and understood, NIE should support continuing research on the D&U process, combining programmed (solicited and specified) as well as unprogrammed (unsolicited and unspecified) projects. Fruitful areas of inquiry have been described in Ronald Havelock's position paper to NIE.